

A5.39 Communities of Mediterranean infralittoral (coastal) terrigenous muds

Summary

The sediment that composes this habitat type is always pure mud, more or less clayey, almost always derived from the erosion of rocks on land carried to sea by rivers. Studies conducted in this zone showed that the combined effects of urbanization, fisheries, aquaculture and sedimentation led to a shift in the associated species assemblages. Thus, this habitat is especially prone to impacts such as coastal pollution, coastal zone development, fisheries and contamination of sediments.

Some general legal provisions, e.g. in fisheries, are in place, but are not specifically focused on this habitat type. Basic knowledge about the habitat and its distribution in the Mediterranean is needed to improve spatial planning in general, and strategic planning of particular human activities when there are competing demands. Designation of Protected Areas is also recommended and reduction of anthropogenic waste to areas where this habitat occurs. Direct engagement of scientists and conservationists in the planning of the management process, analysis of social and economic costs and benefits of different management options, and involvement of diverse stakeholders will be essential to the successful implementation of conservation actions.

Synthesis

This habitat is directly subject to various anthropogenic impacts resulting from urban, industrial, agricultural, aquaculture and other coastal activities such as fishing and the use of bottom towed fishing gears in particular. The latter is particularly widespread in the Mediterranean Sea, recent analysis showing it to be most extensive and of highest intensity in the Adriatic Sea. Many studies also show that combined impacts of urbanization, fisheries, aquaculture and sedimentation lead to a shift in associated assemblages. Declines in quality over the last 50 years cannot be quantified but expert opinion is that this is likely to have been fairly substantial. This habitat has therefore been assessed as Near Threatened under criteria C/D for the EU 28 and EU 28+.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Near Threatened	C/D1	Near Threatened	C/D1

Sub-habitat types that may require further examination

None.

Habitat Type

Code and name

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There are no characteristic photographs currently available for this habitat.

Habitat description

The sediment that conforms this habitat is always pure mud, more or less clayey, almost always derived from the erosion of rocks on land carried to sea by rivers (of fluvial origin). Such coarse debris is quickly covered with no epifauna developing as a result. In sheltered areas, this habitat is characterized by

associations with *Cymodocea nodosa*, *Zostera noltii* and *Caulerpa prolifera*.

Indicators of quality:

Standard biotic and abiotic indicators have been used to describe marine habitat quality, but the presence and abundance of characteristic species can also be used as an indicator of habitat quality.

Characteristic species:

Include: gastropods *Turritella sp.*; polychaets: *Sternaspis scutata*, *Aphrodite aculeata*; bivalves: *Acanthocardia paucicostata*; sea pen: *Pennatula phosphorea*, *Veretillum cynomorium*; crustacean: *Medorippe lanata*; sea cucumbers: *Parastichopus regalis*, *Holothuria tubulosa*.

Classification

EUNIS (v1405):

Level 4. A sub-habitat of Sublittoral mud (A5.3)

Annex 1:

1160 Large shallow inlets and bays

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal.

MSFD:

Shallow sublittoral mud

EUSeaMap:

Shallow muds

IUCN:

9.5 Subtidal sandy-mud

9.6 Subtidal muddy

Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?

Unknown

Justification

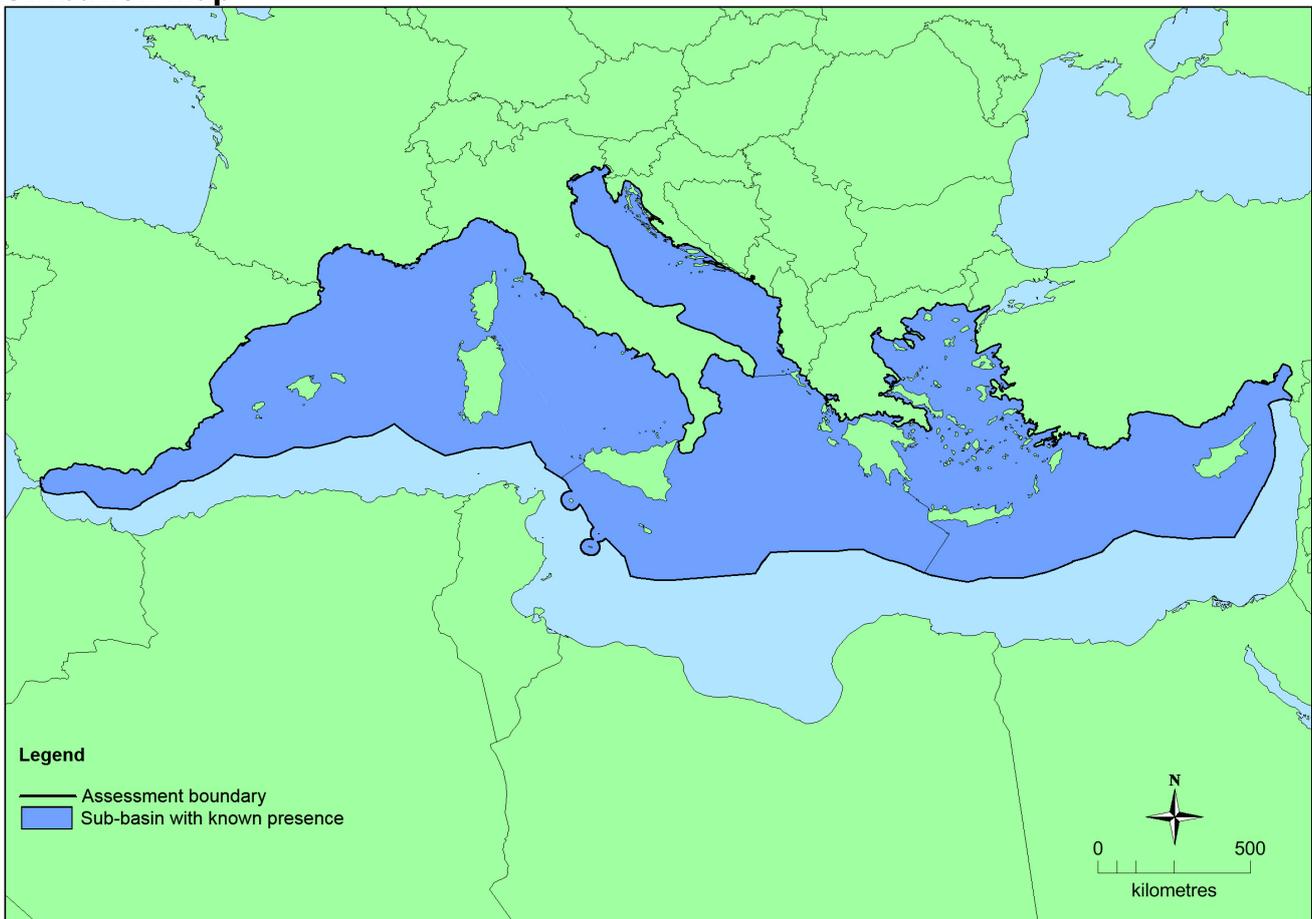
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Mediterranean Sea</i>	Adriatic Sea: Present Aegian-Levantine Sea: Present Ionian Sea and the Central Mediterranean Sea: Present Western Mediterranean Sea: Present	Unknown Km ²	Decreasing	Decreasing

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
<i>EU 28</i>	>50,000 Km ²	Unknown	Unknown Km ²	This habitat is present in all the Mediterranean sub-basins.
<i>EU 28+</i>	>50,000 Km ²	Unknown	Unknown Km ²	This habitat is present in all the Mediterranean sub-basins.

Distribution map



This habitat is known to occur in all Mediterranean sub-basins but there are insufficient data to provide a comprehensive and accurate map of the distribution of this habitat. EOO and AOO have been calculated on the available data presented in this map however these should be treated with caution as expert opinion is that this is not the full distribution of the habitat.

How much of the current distribution of the habitat type lies within the EU 28?

Unknown.

Trends in quantity

The full extent of this habitat is still poorly known, and the studies conducted have mostly focused on the description of the benthic assemblages in relation to sediment characteristics. Expert opinion is that there is a general decline in quantity for this habitat, although this cannot be quantified at present.

- Average current trend in quantity (extent)

EU 28: Decreasing

EU 28+: Decreasing

- Does the habitat type have a small natural range following regression?

No

Justification

The habitat has an EOO that exceeds 50,000 km².

- Does the habitat have a small natural range by reason of its intrinsically restricted area?

No

Justification

The habitat has an EOO that exceeds 50,000 km².

Trends in quality

This habitat is directly subject to various anthropogenic impacts resulting from urban, industrial, agricultural, aquaculture and other coastal activities. Fishing in general, and the use of bottom towed fishing gears in particular, pose ephemeral or permanent threats to this habitat, depending on the relative vulnerability of species present. This is widespread in the Mediterranean Sea with analysis of Automatic Identification System (AIS) ship tracking data revealing that the continental shelf area in the EU Mediterranean countries is almost all subject to a high intensity of trawled gear fishing increasing on an east to west gradient with the highest intensity and extent in the Adriatic Sea. Many studies also show that combined impacts of urbanization, fisheries, aquaculture and sedimentation led to a shift in associated assemblages.

Because of the pressures and threats on infralittoral habitats of soft sediment and severe degradation in some sites it is reasonable to assume that quality of this habitat has declined in much of the Mediterranean.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

Pressures and threats

Many studies conducted within this zone show that the combined effects of urbanization, fisheries, aquaculture and sedimentation led to a shift in the associated species assemblages. Thus, this habitat is especially prone to impacts such as coastal pollution (urban, agricultural, industrial, fish-farming, etc.), coastal zone development (particularly urbanization and uncontrolled building of coastal infrastructures) and fisheries, in particularly bottom trawling.

List of pressures and threats

Agriculture

Use of biocides, hormones and chemicals

Fertilisation

Urbanisation, residential and commercial development

- Urbanised areas, human habitation
- Industrial or commercial areas
- Discharges

Biological resource use other than agriculture & forestry

- Marine and Freshwater Aquaculture
- Fishing and harvesting aquatic resources

Pollution

- Pollution to surface waters (limnic, terrestrial, marine & brackish)
- Marine water pollution
- Soil pollution and solid waste (excluding discharges)

Conservation and management

Basic knowledge on this habitat, the associated assemblages/species biology (distribution, abundance, habitat preferences, life-cycles), its distribution in the Mediterranean and any trends are needed. Spatial planning in general, and strategic planning of particular human activities are needed for the conservation of this habitat when there are competing demands. Designation of Protected Areas is also recommended. In areas where the habitat is affected, it is recommended to reduce anthropogenic waste, particularly domestic and industrial wastewater that is still loaded with fine matter, pollutants and organic matter.

Fisheries legislation for this whole zone exists but precise management measures aimed at this particular habitat are not in place. Direct engagement of stakeholders in the planning of the management process, analysis of social and economic costs and benefits of different management options, will be essential for the successful implementation of conservation actions.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

- Restoring/Improving water quality
- Restoring coastal areas

Measures related to marine habitats

- Restoring marine habitats

Measures related to spatial planning

- Establish protected areas/sites
- Legal protection of habitats and species

Measures related to hunting, taking and fishing and species management

- Regulation/Management of fishery in marine and brackish systems

Measures related to urban areas, industry, energy and transport

- Urban and industrial waste management
- Managing marine traffic

Conservation status

Annex 1:

When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?

Recovery may be extremely slow because of the stable (nondynamic) conditions that prevail in this biotope.

Effort required

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	Unknown %	Unknown %

Whilst there are reports that there have been declines in quantity of habitats in the infralittoral zone due to coastal development along the Mediterranean coast, the extent of decline cannot be quantified. This habitat has therefore been assessed as Data Deficient under Criterion A for both the EU 28 and EU 28+.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50,000 Km ²	Yes	Yes	Unknown	Unknown	Yes	Yes	Unknown	Unknown
EU 28+	>50,000 Km ²	Yes	Yes	Unknown	Unknown	Yes	Yes	Unknown	Unknown

This habitat has a widespread geographical distribution but the exact locations and therefore AOO are unknown. Threatening processes are considered likely to cause continuing declines in the next 20 years. This habitat has therefore been assessed as Least Concern for criteria B1a and B1b for both the EU 28 and EU 28+ and Data Deficient for all other criteria.

Criterion C and D: Reduction in abiotic and/or biotic quality

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	Close to VU threshol %	fairly substantial %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	Close to VU threshol %	fairly substantial %	Unknown %	Unknown %	Unknown %	Unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	Unknown %	Unknown%	Unknown %	Unknown%	Unknown %	Unknown%
EU 28+	Unknown %	Unknown%	Unknown %	Unknown%	Unknown %	Unknown%

This habitat is subject to pressures and threats from urbanization, fisheries, aquaculture and sedimentation which is prevalent along the Mediterranean coastline and has resulted in degradation of infralittoral areas. It has also been impacted by fishries using demersal towed gears in particular which is widespread in the Mediterranean Sea. Declines over the last 50 years specific to this habitat cannot be quantified but expert opinion is that this is likely to have been fairly substantial. This habitat has therefore been assessed as Near Threatened under criteria C/D1.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	Unknown
EU 28+	Unknown

There is no quantitative analysis available to evaluate risk of habitat collapse. Therefore, the habitat is assessed as Data Deficient under Criterion E.

Overall assessment "Balance sheet" for EU 28 and EU 28+

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	DD	DD	DD	DD	LC	DD	DD	NT	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	LC	DD	DD	NT	DD	DD	DD	DD	DD	DD	DD	DD	DD

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Near Threatened	C/D1	Near Threatened	C/D1

Confidence in the assessment

Low (mainly based on uncertain or indirect information, inferred and suspected data values, and/or limited expert knowledge)

Assessors

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Reviewers

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Date of review

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